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# Mind the Gap: Gender Discrimination in Loan Pricing Around the World

Christoph Domnick
*University of Münster*

Nadja Guenster
*University of Münster*

Stefanie Kleimeier
*Open Universiteit &*
*Maastricht University*

2025 EBA POLICY RESEARCH WORKSHOP

November 19, 2025

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# Discrimination against women (in lending)?

Discrimination against women in healthcare (Azad et al., 2020), education (Alan et al., 2018), political representation (Teele et al., 2018), and in the labor market (Moss-Racusin et al., 2012)

**Empirical evidence for discrimination against women in the private loan market:**

- Mortgage credit market (Fang & Munneke 2017; Ladd 1982; Robinson 2002)
- Peer-to-peer lending (Chen et al. 2020)

**Evidence in the corporate lending market is mixed:**

- Discrimination in SME lending (Alesina et al. 2013; Fay & Williams 1993; Mijid & Bernasek 2013)
- No loan pricing differences (Blanchflower et al. 2003; Storey 2004)
- More favorable loan conditions in syndicated lending (Francis et al. 2013)

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**Studies focus on single-country samples, but perceptions of women (as business leaders) vary around the world**

# Cross-country differences in female leadership

- Hofstede (1980)
  - Stereotypes are shaped by the underlying cultural context and can vary significantly across countries
- Stereotypes of women in the business world
  - Societal beliefs rooted in Confucianism, Islamic teachings, or traditional family values can foster negative stereotypes about women in business (Omar and Davidson, 2001)
  - Women in gender-egalitarian countries are seen as more competent leaders than in countries with a high power distance or traditional gender roles (GLOBE Leadership Study, 2004)

# Cultural measure for gender equality

- **Equality Score** is a proxy for a country's attitudes and beliefs regarding women's ability in executive positions relative to men

- IVS statement: "**Men make better business executives than women**"
  - Agree strongly, Agree, Disagree, Strongly Disagree
  - Respondents who "Strongly Disagree" and "Disagree" as % of total respondents
  - Range 0 - 100
    - Baseline of 0 = the whole country perceives men as better executives
    - Higher value → more gender equality
    - Mean score in sample = 83.40
- France: **?**

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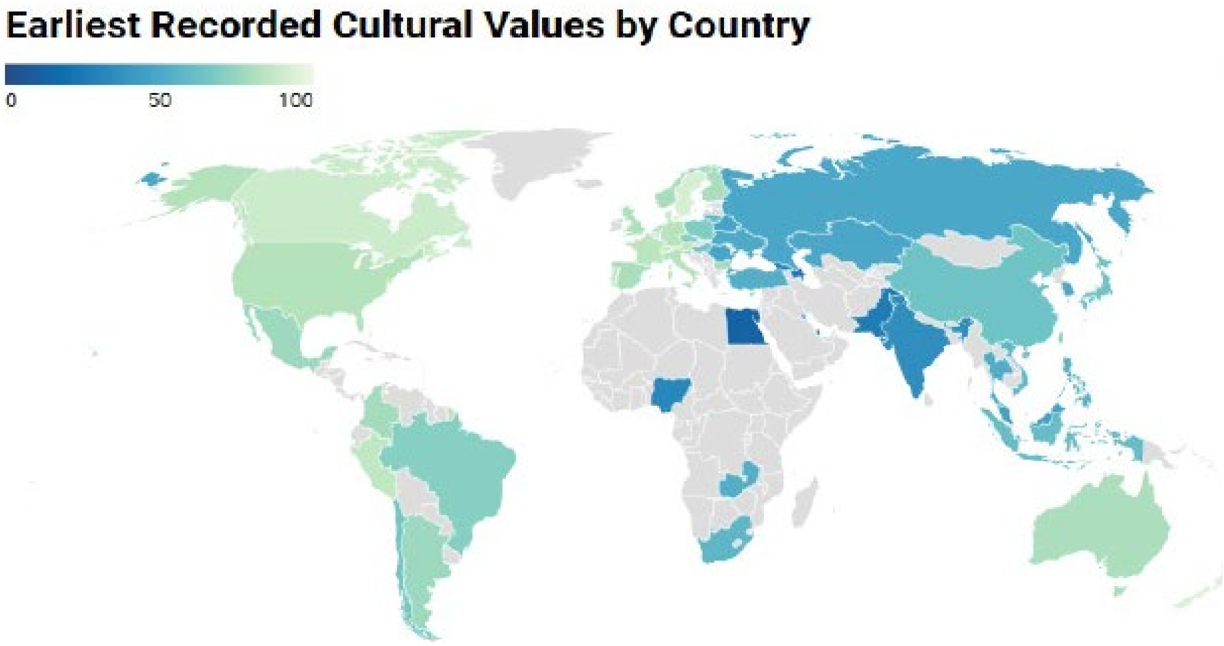
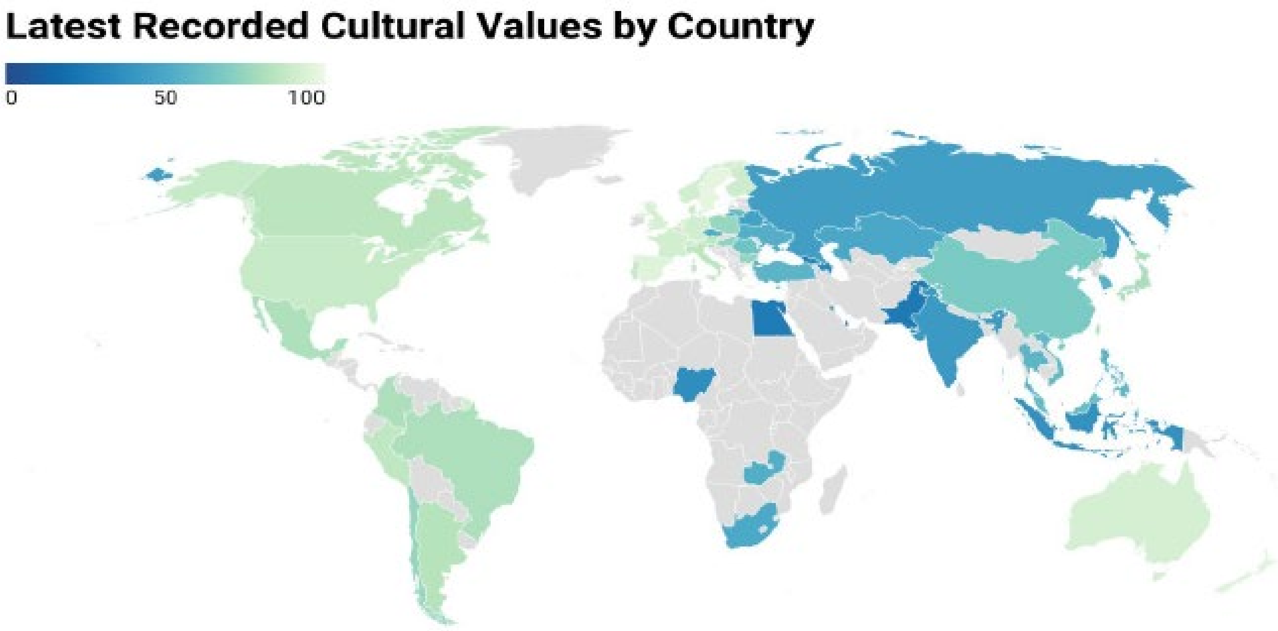
        - Mean score in sample = 83.40
- France: **91.7**

# Cultural measure for gender equality



# Hypothesis

As the cultural perception of women as business leaders becomes more negative, female-led firms pay higher spreads relative to

(1) male firms and

(2) female-led firms in countries with a less negative perception

# Data

- **LPC Dealscan**: Detailed information on syndicated loans
- **ExecuComp & Orbis**: Executive information on gender
- **Orbis**: Accounting information
- **Integrated Value Survey**: Data on cross-country perception of female executives relative to men
  - World Value Survey & European Value Survey
  - 466 surveys in 118 countries since 1981

- **14,039 loan tranches** obtained by **3,916 individual firms** from **57 countries** from **2003 until 2024**

# Methodology

$$\text{Spread}_{i,t} = \alpha + \beta_1 \textbf{Female } \boldsymbol{Executives}_{\mathbf{i},\boldsymbol{t}} * \textbf{Equality } \boldsymbol{Score}_{\mathbf{c},\boldsymbol{t}} + \beta_2 \text{Controls}_{i,t} + \text{FE} + \epsilon_{i,t}$$

- Controls
  - *Borrower*: Firm size, Tangibility, Leverage, Z-score, Profitability, Transparency, Credit rating
  - *Loan*: Loan size, Maturity, Secured, Senior, Currency, Relationship loan, Term loan, Multiple tranches, Financial covenants, Refinance, Performance pricing
  - *Country*: Level of democracy, Financial development, Economic growth
- Fixed Effects
  - Industry, Country, Year, Loan purpose, Executive's age, experience, degree, and major

| | Spread in bps |
|---|---|
| **Female Executives** | **220.65**** |
| **Female Executives x Gender Equality** | **-2.56**** |
| **Gender Equality** | **0.11** |
| Borrower, loan, country characteristics | Yes |
| <u>Fixed effects</u> | |
| Borrower industry, country | Yes |
| Loan signing year, purpose | Yes |
| CFO characteristics | Yes |
| CEO characteristics | Yes |
| | |
| Percentage Female | 12.82 |
| Adjusted R-squared | 0.467 |
| Observations | 6,550 |

Significance at *** 1%, ** 5%, * 10 % level

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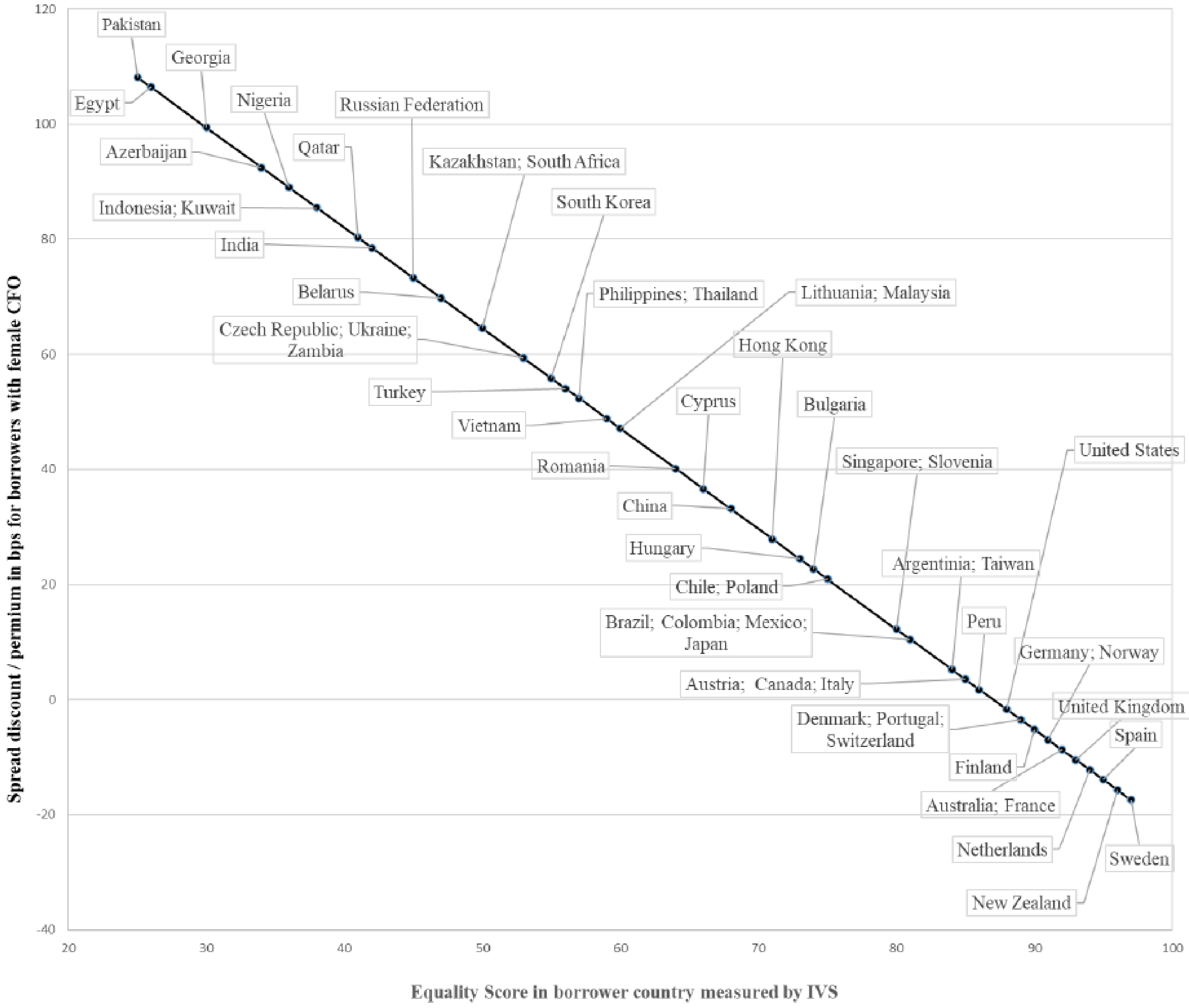
Female premium of **220.65 bps** if nobody disagrees with the statement that men make better business executives than women

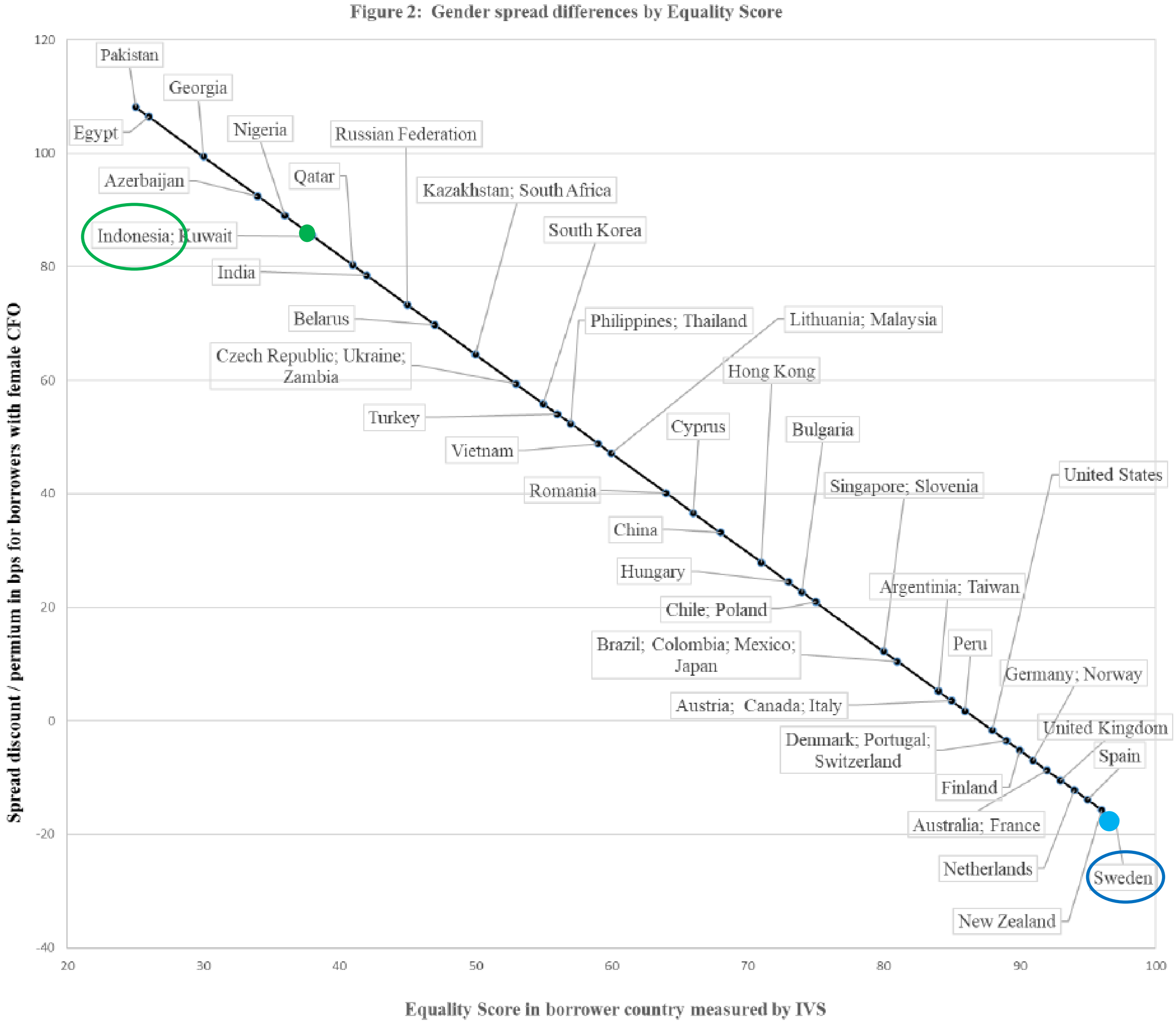
For each 1% of people who disagree, the premium drops by **2.56 bps**

| | Spread in bps | | |
|---|---|---|---|
| | **Female Executive** | **Female CFO** | **Female CEO** |
| **Female Executives** | **220.65**** | **151.77***** | **379.86** |
| **Female Executives x Gender Equality** | **-2.56**** | **-1.74***** | **-4.47** |
| **Gender Equality** | **0.11** | **-0.40** | **0.00** |
| Borrower, loan, country characteristics | Yes | Yes | Yes |
| Fixed effects | | | |
| Borrower industry, country | Yes | Yes | Yes |
| Loan signing year, purpose | Yes | Yes | Yes |
| CFO characteristics | Yes | Yes | No |
| CEO characteristics | Yes | No | Yes |
| | | | |
| Percentage Female | 12.82 | 9.74 | 3.62 |
| Adjusted R-squared | 0,467 | 0.465 | 0.466 |
| Observations | 6,550 | 6,550 | 6,550 |

Significance at *** 1%, ** 5%, * 10 % level

**Figure 2: Gender spread differences by Equality Score**






For an average loan of $647.5 m

- Firms with female CFOs in Indonesia pay an additional $5.76 million p.a. loan cost compared to male-led firms

- Firms with female CFOs in Sweden pay $1.17 million p.a. less loan cost compared to male-led firms

# Women in leadership or broader societal bias?

- What are the underlying drivers of these cultural perceptions?

(1) **Context-specific**: Distrust is limited to women in leadership positions

(2) **Broader stereotypes**: Discrimination as a manifestation of traditional gender roles and power dynamics

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# Women in leadership or broader societal bias?

- **"Job Scarce: Men should have more right to a job than women"**
  - Society's view on traditional gender roles
  - A low score indicates that men are seen as more important in the labor market, implying that women are seen as less capable or expected to stay at home and care for children

- **"Problem if women have more income than husband"**
  - Society's view on power dynamics
  - A low score reflects traditional power dynamics and discomfort with women in positions of financial superiority

- **Logic**: If the previously observed results are purely driven by perceptions of female traits in the business context, there should be no significant effect

| | Spread in bps | | | | | |
|---|---|---|---|---|---|---|
| | "Problem if women have more income than husband" | | | "Job scarce: Men should have more right to a job than women" | | |
| | **Female Executive** | **Female CFO** | **Female CEO** | **Female Executive** | **Female CFO** | **Female CEO** |
| **Female Executives** | **295.78*** ** | **298.93*** ** | **71.99** | **224.46** ** | **172.70*** ** | **346.20** |
| **Female Executives x Gender Equality** | **-3.34*** ** | **-3.36*** ** | **-0.91** | **-2.43** ** | **-1.85*** ** | **-3.81** |
| **Gender Equality** | **1.22** | **1.15** | **1.38** | **-1.52** | **-1.47** | **-1.87** |
| Borrower, loan, country characteristics | Yes | Yes | Yes | Yes | Yes | Yes |
| <u>Fixed effects</u> | | | | | | |
| Borrower industry, country | Yes | Yes | Yes | Yes | Yes | Yes |
| Loan signing year, purpose | Yes | Yes | Yes | Yes | Yes | Yes |
| CFO characteristics | Yes | Yes | No | Yes | Yes | No |
| CEO characteristics | Yes | No | Yes | Yes | No | Yes |
| | | | | | | |
| Percentage Female | 13.66 | 10.29 | 3.95 | 12.82 | 9.74 | 3.62 |
| Adjusted R-squared | 0.430 | 0.429 | 0.425 | 0.467 | 0.466 | 0.466 |
| Observations | 3,945 | 3,945 | 3,945 | 6,550 | 6,550 | 6,550 |

Significance at *** 1%, ** 5%, * 10 % level

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| | ln(loan size $m) |
|---|---|
| **Female CFO** | **-1.57*** ** |
| **Female CFO x Gender Equality** | **0.018*** ** |
| **Gender Equality** | **0.011** |
| Borrower, loan, country characteristics | Yes |
| <u>Fixed effects</u> | |
| Borrower industry, country | Yes |
| Loan signing year, purpose | Yes |
| CFO characteristics | Yes |
| | |
| Percentage Female | 9.74 |
| Adjusted R-squared | 0.561 |
| Observations | 6,550 |

Significance at *** 1%, ** 5%, * 10 % level

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| | ln(loan size $m) |
|---|---|
| **Female CFO** | **-1.57*** ** |
| **Female CFO x Gender Equality** | **0.018*** ** |
| **Gender Equality** | **0.011** |
| Borrower, loan, country characteristics | Yes |
| Fixed effects | |
| Borrower industry, country | Yes |
| Loan signing year, purpose | Yes |
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Female CFOs receive **79% smaller loans** when nobody disagrees with the statement that men make better business executives than women

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Female CFOs receive **79% smaller loans** when nobody disagrees with the statement that men make better business executives than women

For each 1% of people who disagree, the loan size increases by **1.8%**

# Robustness Checks

- Alternative gender bias proxy: “Men make better political leaders than women“
- Excluding loans to US borrowers (largest single-country share)
- Excluding countries with no / fewer than 5 loans to firms with female executives
- Using the Equality Score of the country of syndication (e.g., bank) rather than the country of the borrower
- Additional control for non-financial fraud (Brazel et al. 2009)
  - Female executives are more risk-averse and ethical than male executives (Faccio et al. 2016; Huang & Kisgen 2013; Luo et al. 2020)
- Propensity Score Matching (*work in progress*)

# Conclusions

- Firms led by female CFOs receive significantly higher loan spreads and smaller loans than those led by male CFOs in countries with negative perceptions of females as business leaders
    - Effects decrease with more gender equal attitudes towards female executives
- The gender of the CEO does not play a role in lending decisions
- Preliminary evidence suggests that
    - The discrimination is at least partially driven by deeply entrenched traditional and patriarchal stereotypes and views on gender roles
- Omitted cultural aspect can explain mixed results in existing single-country studies

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# What do we do? What do we add?

- **International analysis** of executive gender & syndicated loan pricing
  - Initial sample: 57 countries
  - After applying controls: 44 countries

- Examine **cross-country differences**
- Investigate the impact of differences in cultural views
  - Specific focus on cross-country variation in the perception of female business executives' ability compared to men

→ Large **variation** in cultural perceptions of female business executives **across countries**

→ This variation **explains differences in loan pricing** in the syndicated loan market

| | Spread in bps | | | | | | |
|---|---|---|---|---|---|---|---|
| **Female Executives** | **-6.43** | **2.89** | **1.81** | **2.42** | **1.76** | | |
| **Female CFO** | | | | | | **3.53** | |
| **Female CEO** | | | | | | | **-5.23** |
| Borrower characteristics | No | Yes | Yes | Yes | Yes | Yes | Yes |
| Loan characteristics | No | No | Yes | Yes | Yes | Yes | Yes |
| Country characteristics | No | No | No | Yes | Yes | Yes | Yes |
| Fixed effects | | | | | | | |
| Borrower industry, country | No | Yes | Yes | Yes | Yes | Yes | Yes |
| Loan signing year, purpose | No | No | Yes | Yes | Yes | Yes | Yes |
| CFO characteristics | No | No | No | No | Yes | Yes | No |
| CEO characteristics | No | No | No | No | Yes | No | Yes |
| | | | | | | | |
| Percentage Female | 12.7 | 13.1 | 13.1 | 12.8 | 12.8 | 9.7 | 3.6 |
| Adjusted R-squared | 0.00 | 0.27 | 0.46 | 0.46 | 0.47 | 0.47 | 0.47 |
| Observations | 14,039 | 6,855 | 6,855 | 6,550 | 6,550 | 6,550 | 6,550 |

Significance at *** 1%, ** 5%, * 10 % level

# Which culture matters for loan pricing?

- Lead Bank Culture
  - Title inflation: The "lead arranger" has become a prestige label, often shared among multiple banks (up to 10 per deal)
  - The true decision maker is often unclear → Cultural assignment becomes unreliable
  - Averaging across multi-national arrangers introduces substantial cultural noise

- Borrower Country
  - Stable and observable across time
  - Local norms define whether gender stereotypes toward executives exist
  - Defines the institutional and information environment that lenders evaluate
  - ≈ 70% of lead arrangers originate from the same country as the borrower

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# Methodology

$$\mathrm{Spread}_{\mathrm{i,t}} = \alpha + \beta_1 \mathbf{Female}\ \boldsymbol{Executives}_{\mathbf{i},\boldsymbol{t}} + \beta_2 \mathrm{Controls}_{\mathrm{i,t}} + \mathrm{FE} + \epsilon_{\mathrm{i,t}}$$

$$\mathrm{Spread}_{\mathrm{i,t}} = \alpha + \beta_1 \mathbf{Female}\ \boldsymbol{Executives}_{\mathbf{i},\boldsymbol{t}} * \mathbf{Equality}\ \boldsymbol{Score}_{\mathbf{c},\boldsymbol{t}} + \beta_2 \mathrm{Controls}_{\mathrm{i,t}} + \mathrm{FE} + \epsilon_{\mathrm{i,t}}$$

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